AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-26. (Cancelled)

27. (Currently Amended) A method of producing a coating, the method comprising:

receiving a coating component within a mixing reservoir;

receiving an additive within the mixing reservoir;

ultrasonically dispersing the additive with the coating component within the mixing reservoir; ~~[[and]]~~

actively cooling a mixture of the additive and coating component by ~~allowing thermal energy transfer therefrom~~ receiving from the mixing reservoir at least a portion of the mixture within a heat exchanger of a cooling loop;

urging the mixture from the heat exchanger to a valve of the cooling loop;

diverting at least a portion of the mixture having a temperature within a desired temperature range from the valve to a storage container; and

returning to the mixing reservoir any portion of the mixture not diverted from the valve.

28. (Original) The method of claim 27, wherein the actively cooling comprises maintaining the mixture within a desired temperature range.

29. (Original) The method of claim 27, wherein the actively cooling comprises transferring from the mixture a substantial entirety of the thermal energy produced by the ultrasonic dispersing.

30. (Original) The method of claim 27, further comprising mechanically agitating the mixture.

31. (Original) The method of claim 27, further comprising:

reducing pressure within the mixing reservoir; and

maintaining the mixing reservoir at the reduced pressure.

32. (Original) The method of claim 31, wherein the reducing and maintaining comprises placing the mixing reservoir under a vacuum of at least about 29" Hg.

33. (Original) The method of claim 27, further comprising degassing the additive before receiving the additive within the mixing reservoir.

34. (Cancelled) ~~The method of claim 27, wherein the actively cooling comprises:~~

~~receiving the mixture within a heat exchanger to cool the mixture by thermal energy transfer from the mixture to the heat exchanger; and~~

~~returning the mixture from the heat exchanger to the mixing reservoir~~.

35. (Original) The method of claim 27, wherein the actively cooling comprises:

receiving the mixture within a heat exchange coil at least partially positioned within a fluid to cool the mixture by thermal energy transfer from the mixture to the fluid; and

returning the mixture from the heat exchange coil to the mixing reservoir.

36. (Original) The method of claim 27, wherein the ultrasonically dispersing comprises:

positioning a sonotrode within the mixing reservoir; and

applying energy to the sonotrode to generate ultrasonic energy which propagates through the base within the mixing reservoir.

37. (Original) The method of claim 27, wherein the receiving an additive within the mixing reservoir comprises receiving pigment particles within the mixing reservoir.

38. (Original) The method of claim 27, wherein the receiving a coating component within a mixing reservoir comprises receiving a binder within the mixing reservoir.

39. (Original) The method of claim 27, wherein the receiving a coating component within a mixing reservoir comprises receiving a solvent within the mixing reservoir.

40. (Original) The method of claim 27, wherein the receiving a coating component within a mixing reservoir comprises receiving a resin carrier within the mixing reservoir.

41. (New) The method of claim 27, wherein the mixture can be cooled to a temperature within a desired temperature range by controllably varying the flow rate of the mixture through the cooling loop.

42. (New) The method of claim 41, wherein the flow rate of the mixture through the cooling loop and the time and amplitude of the ultrasonic dispersion is controlled under automatic computer control.

43. (New) The method of claim 41, wherein the cooling loop is configured to cool the mixture to approximately 70 degrees Fahrenheit.

44. (New) The method of claim 36, wherein the additive is received within the mixing reservoir after applying energy to the sonotrode.

45. (New) The method of claim 36, wherein the cooling loop is configured and sized according to ultrasonic energy input from the sonotrode.

46. (New) The method of claim 36, wherein positioning a sonotrode within the mixing reservoir including translating the sonotrode relative to the mixing reservoir to position at least a distal end portion of the sonotrode for immersion within the mixing reservoir.

47. (New) The method of claim 27, further comprising positioning a disposable liner within the mixing reservoir before receiving the coating component and the additive within the mixing reservoir, to thereby inhibit the coating component and the additive from directly contacting the mixing reservoir.

48. (New) The method of claim 47, further comprising removing the disposable liner from the mixing reservoir after removal of the mixture from the mixing reservoir.

49. (New) The method of claim 31, wherein the reducing and maintaining includes using a vacuum pump operatively connected to the mixing reservoir.

50. (New) The method of claim 31, wherein the reducing and maintaining includes receiving fluid from a fluid source within at least one venturi nozzle of a venturi vacuum generator operatively connected to the mixing reservoir.

51. (New) The method of claim 27, wherein receiving an additive within the mixing reservoir includes receiving the additive from an additive source comprising at least one or more of a hopper, a filler tube, and a powder hopper with an Iris valve and ram.

52. (New) The method of claim 27, wherein the actively cooling comprises receiving the mixture within a heat exchange coil immersed within a coolant to cool the mixture by thermal energy transfer from the mixture to the coolant.

53. (New) The method of claim 52, wherein the coolant comprises an ethylene glycol/water mixture having a temperature between about negative 2 degrees Celsius and 2 degrees Celsius.

54. (New) The method of claim 52, further comprising recovering heat from the coolant as process heat.

55. (New) The method of claim 27, further comprising removing at least a portion of the mixture from the mixing reservoir by at least one or more of draining, siphoning, and pouring from the mixing reservoir.

56. (New) The method of claim 28, wherein the cooling loop is configured for maintaining the mixture at approximately 70 degrees Fahrenheit.

57. (New) The method of claim 27, further comprising opening a hinged door of the mixing reservoir to obtain access to the interior chamber of the mixing reservoir.